

# Health and Culture Technical Working Group

## Governor's Sub-Cabinet for Climate Change

### Alaska Forum on the Environment

February 4, 2009 Anchorage

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# HEALTH EFFECTS OF CLIMATE CHANGE

**CLIMATE CHANGE**

**Temperature Rise**<sup>1</sup>  
**Sea level Rise**<sup>2</sup>  
**Hydrologic Extremes**

1 **3° C** by 2100  
2 **40 cm** by 2100

IPCC estimates

**Urban Heat Effect**

Heat Stress  
Cardiorespiratory failure

**Air Pollution & Aeroallergens**

Respiratory diseases, e.g., COPD & Asthma

**Insect Related Diseases**

Malaria  
Dengue  
Encephalitis  
Hantavirus  
West Nile virus  
Stings / Anaphylaxis

**Water-borne Diseases**

Cholera  
Cyclospora  
Cryptosporidiosis  
Campylobacter  
Leptospirosis  
Vibrio

**Water resources & food supply**

Malnutrition  
Diarrhea  
Toxic Red Tides

**Mental Health & Environmental Refugees**

Forced Migration  
Overcrowding  
Infectious diseases  
Human Conflicts

*Adapted from Patz, 1998*

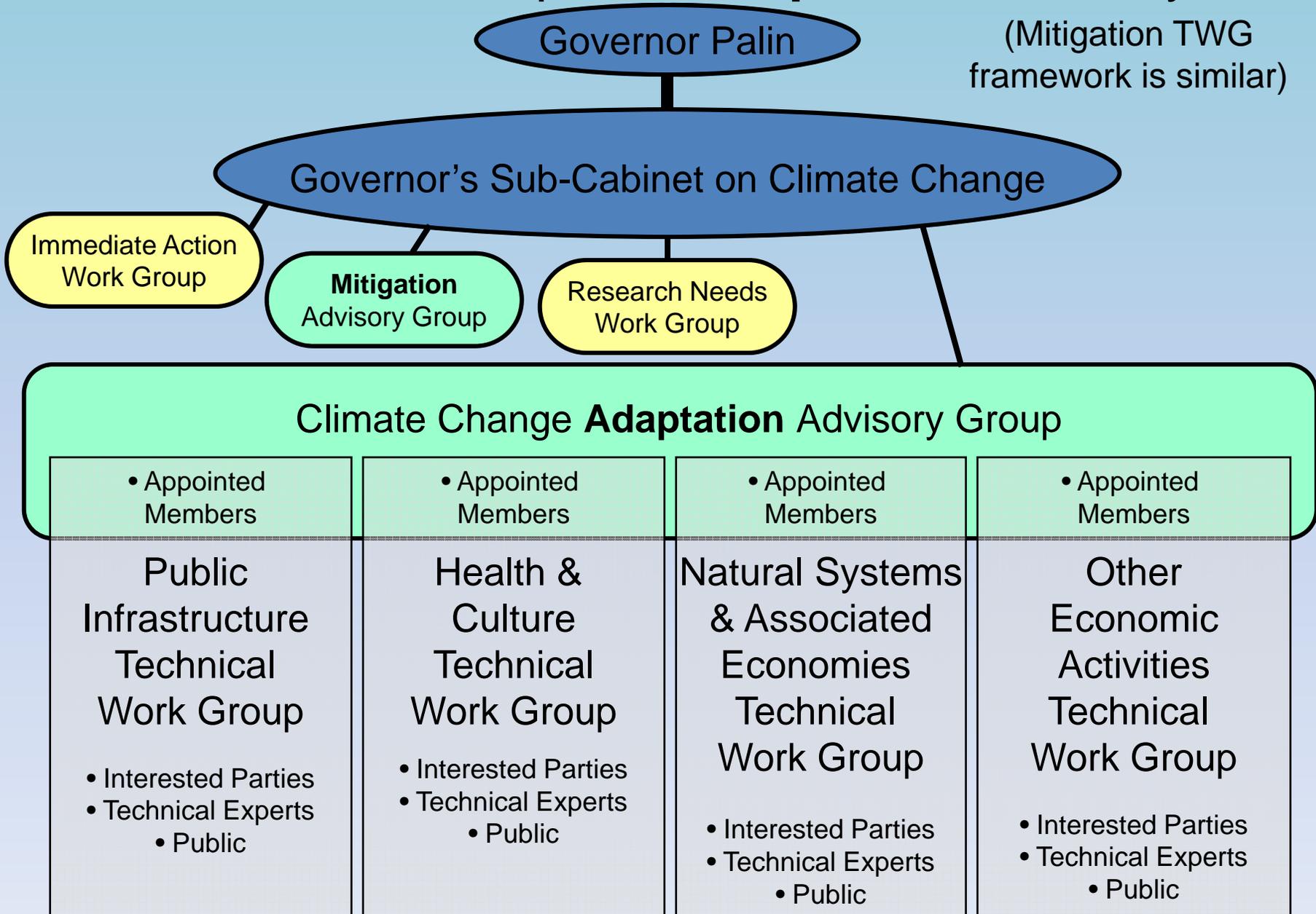
# Health Impacts will vary...

- Regionally
  - Rate of climate change
  - Health status of the population
  - Public Health Response
  - Adaptive capacity and response of the population



# Technical Work Groups for **Adaptation** Advisory Group

(Mitigation TWG framework is similar)



# Adaptation Advisory Group (AAG) Technical Working Group (TWG) Composition

- Public Infrastructure
  - the physical impacts of climate change on the built environment and transportation options
- **Health and Culture**
  - **Human health, cultural, archeological, recreational and way of living impacts of climate change**
- Natural Systems
  - Impacts of climate change on biodiversity, ecosystem health and associated human economic activities
- Other Economic Activity
  - Economies affected by a changing climate that are not directly dependent on living ecosystems.

# Health & Culture

- Option 1: Identify a Central Ombudsman
  - Support rural communities deal with complex issues requiring coordination among multiple state and federal agencies, local governments and others.
  
- Option 2: Augment Surveillance and Control for Insect, Water and Food-borne Disease
  - Protect the health of humans and animals, both domestic and wildlife, from emerging threats effected by climate change.

# Health & Culture

- **Option 3: Community Health Impact Evaluation**
  - Establishes a mechanism by which any planned adaptation or mitigation activity can be rapidly screened to see whether a detailed evaluation might be advisable.
  
- **Option 4: Environmental Health Protection**
  - Evaluate sanitation infrastructure and practices at risk from flooding, thawing permafrost, and other events that will reduce performance of environmental health protection.

# Health & Culture

- Option 5: Archeological Sites and Gravesites
  - In cooperation with appropriate local, regional, and statewide entities; assess archeological sites and gravesites at risk from accelerated coastal and river erosion.
  - Protection and recovery of important at-risk sites.

AK Native Science Commission  
Inuit Circumpolar Council  
Allergy, Asthma, and Immunology Center of AK  
Catholic Cathedral, Juneau  
NANA Corp  
Emergency Preparedness & Traditional Food Safety, ANTHC  
Bering Sea Elders Advisory Group  
Whaling Captain (Barrow)  
State Veterinarian, ADEC  
Huntington Consulting  
Tanana Chiefs Conference  
Tribal Administrator Native Village of Kwigillingok  
State Epidemiologist and Chief, Alaska Section of Epidemiology  
Environmental Health Services, ANTHC  
Statewide Alaska Inter-Tribal Council  
Dept of Archaeology, UAF  
National Park Service  
Food Safety and Sanitation Program at DEC  
National Association of Food and Drug Officials (AFDO)  
Alaska Department of Fish and Game  
Zender Environmental Health and Research Group  
Community Environment and Safety, ANTHC  
Office of History and Archaeology, Alaska DNR  
Professor of Anthropology, UA Kenai

# Our Consultants and Facilitators

Jason Vogel, PhD

Status Consulting

Dr. Vogel holds a PhD in environmental studies and an MS in astrophysical, planetary, and atmospheric sciences from the University of Colorado, Boulder; as well as a BS in chemistry and a BA in humanities from the University of Texas at Austin.

Kris Ebi, PhD

ESS Consulting

Dr. Ebi's scientific training includes a M.S. in toxicology and a Ph.D. and MPH in epidemiology, plus two years of postgraduate research in epidemiology at the London School of Hygiene and Tropical Medicine.

# Health and Culture TWG

## Our Presentations

- Insect & Vector-borne Disease
  - Jeffrey G Demain, MD
- Food and Water-borne Disease
  - Joe McLaughlin, MD, MPH
- Subsistence Impacts
  - Craig Fleener, BS
- Cultural Impacts
  - Elaine Abraham, MS

<http://climatechange.alaska.gov/>